ipd4300mdlltsvdTES-10

Defense Information Infrastructure (DII)

Common Operating Environment (COE)

Software Version Description (SVD) for the Latitude-Longitude-Time (LLT) Observation Database Segment (MDLLT) of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database

Preliminary Release

Document Version 4.3

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1 SCOPE

1.1 Identification

This Software Version Description (SVD) describes the Latitude–Longitude–Time (LLT) Observation Database (MDLLT) segment, Version 4.3 series, of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database. The MDLLT is a DII COE *shared database* segment for the storage of METOC point observations. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE), release 3.1, on a Hewlett-Packard computer running HP-UX 10.20.

1.2 System Overview

The software described in this document forms a portion of the METOC Database component of the TESS(NC) Program (Navy Integrated Tactical Environmental Subsystem (NITES) Version I). On 29 October 1996, the Oceanographer of the Navy issued a TESS Program Policy statement in letter 3140 Serial 961/6U570953, modifying the Program by calling for five seamless software versions that are DII COE compliant, preferably to level 5.

The five versions are:

- NITES Version I — The local data fusion center and principal METOC analysis and forecast system (TESS(NC))
- NITES Version II — The subsystem on the Joint Maritime Command Information System (JMCIS) or Global Command and Control System (GCCS) (NITES/Joint METOC Segment (JMS))
- NITES Version III — The unclassified aviation forecast, briefing, and display subsystem tailored to Naval METOC shore activities (currently satisfied by the Meteorological Integrated Data Display System (MIDDS))
- NITES Version IV — The Portable subsystem composed of independent PCs/workstations and modules for forecaster, satellite, communications, and Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance (IC4ISR) functions (currently the Interim Mobile Oceanographic Support System (IMOSS))
- NITES Version V — Foreign Military Sales (currently satisfied by the Allied Environmental Support System (AESS))

NITES I acquires and assimilates various METOC data for use by US Navy and Marine Corps weather forecasters and tactical planners. NITES I provides these users with METOC data, products, and applications necessary to support the warfighter in tactical operations and decision making. NITES I provides METOC data and products to NITES I and II applications, as well as non-TESS(NC) systems requiring METOC data, in a heterogeneous, networked computing environment.

The TESS(NC) Concept of Operations and system architecture require that the METOC Database be distributed both in terms of application access to METOC data and products and in terms of physical location of the data repositories. The organizational structure of the database is influenced by these requirements, and the components of this distributed database are described below.

In accordance with DII COE database concepts, the METOC Database is composed of six DII COE-compliant *shared database* segments. Associated with each shared database segment is an Application Program Interface (API) segment. The segments are arranged by data type as follows:

Data Type	**Data Segment**	**API Segment**
Grid Fields	MDGRID	MAGRID
LLT Observations	MDLLT	MALLT
Textual Observations and Bulletins	MDTXT	MATXT
Remotely Sensed Data	MDREM	MAREM
Imagery	MDIMG	MAIMG
Climatology Data	MDCLIM	MACLIM

A typical client-server installation is depicted in Figure 1-1 on the next page. This shows the shared database segments residing on a DII COE SHADE database server, with a NITES I or II client machine hosting the API segments. Communication between API segments and shared database segments is accomplished over the network using ANSI-standard Structured Query Language (SQL).

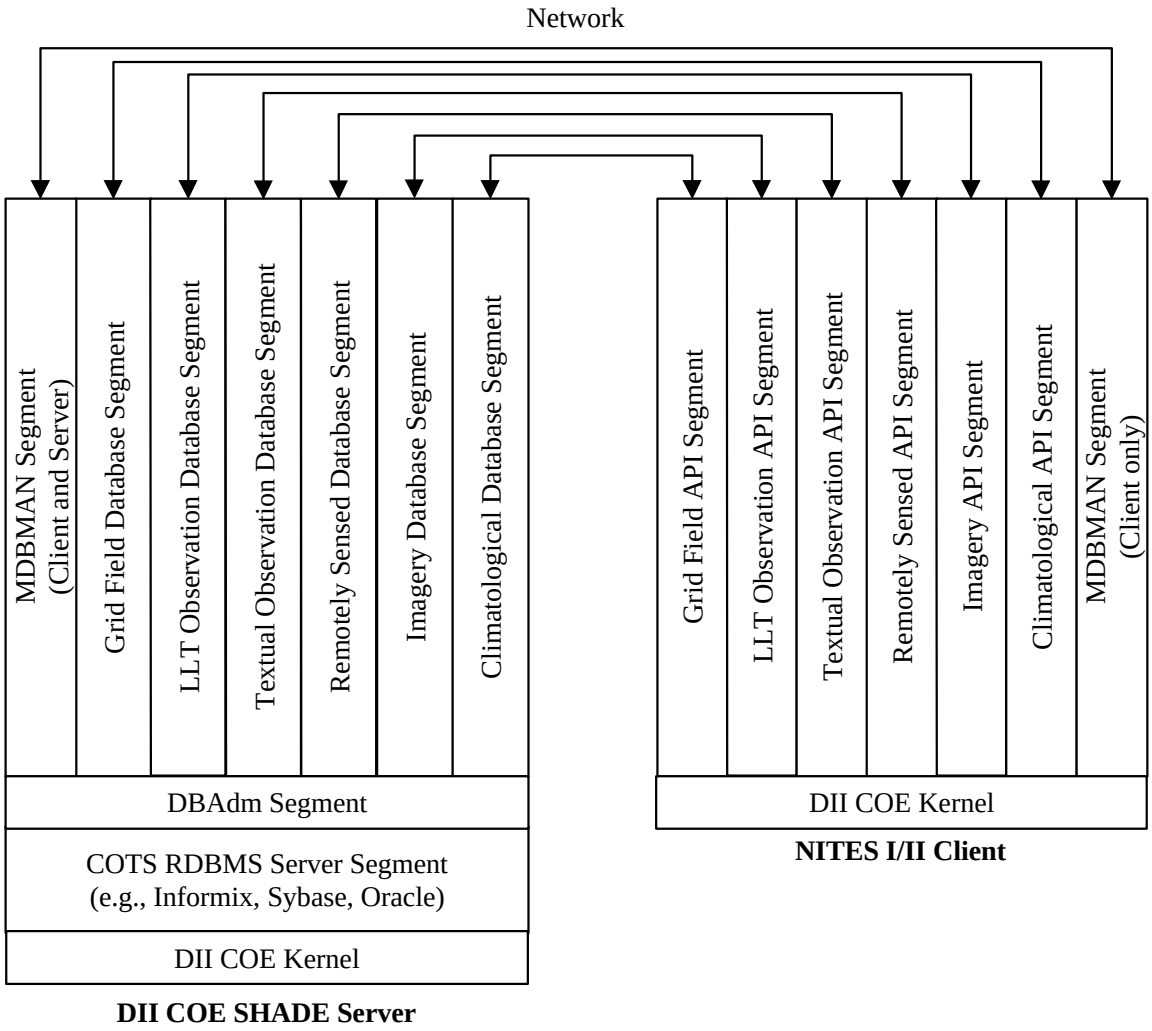

Figure 1-1. TESS(NC) METOC Database Conceptual Organization

The MDLLT segment deals with point observations. These include surface weather observations (hourlies, specials, synoptic observations, METAR reports, Terminal Aerodrome Forecasts (TAFs), etc.), upper air observations (e.g., radiosonde reports, aircraft observations), and ocean soundings (bathythermograph, sound velocity profiles, etc.). For upper air and ocean soundings, the database may also store data derived from the original soundings in the form of upper air profiles and ocean profiles.

1.3 Product Information

1.3.1 Product Qualification

Test and Evaluation (T&E) of the software was performed at IPD's Middletown, RI facility prior to delivery of the software.

1.3.2 Product Restrictions

IPD's intellectual property rights to deliverables defined in this document are covered by the copyright license under the clause in DFARS 252.227-7013 (Nov. 1995).

1.3.3 Product Dependencies

The MDLLT segment is hosted on the following hardware:

- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210)

The operating system requirements are:

- TAC-3/TAC-4: HP-UX 10.20

The kernel requirements are:

- Kernel 3.0.1.0 with patches through P4

The following software must be properly installed prior to loading the MDLLT segment:

- Appropriate operating system (as described above)
- Appropriate DII COE Kernel (as described above)
- DII COE Informix Connect Segment (INFXCN), version 1.0.1.0

2 REFERENCED DOCUMENTS

2.1 Government Documents

Unnumbered 30 September 1997	*Database Design Description for the Tactical Environmental Support System/Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*, Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC
ipd4300mdlltipTES-10 9 October 1998	*Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observation Database (MDLLT) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*

2.2 Non-Government Documents

None.

3 VERSION DESCRIPTION

3.1 Inventory of materials released

All physical media and associated documentation for the MDLLT segment are listed below.

- MDLLT segment v4.3 (HP-UX) Installation Tape (4 mm DAT cartridge for TAC-3/TAC-4 hardware)
- MDLLT segment v4.3 series IP, dated 9 October 1998
- MDLLT segment v4.3 SVD, dated 9 October 1998.

3.2 Inventory of Software Contents

A list of all executables and environment files delivered is contained in Appendix A of this document.

3.3 Changes Installed

A list of changes installed since the Preliminary (Developer) Release of the MDLLT software is contained in Appendix B of this document.

3.4 Waivers

There are no waivers associated with this software

3.5 Adaptation Data

There are no unique-to-site data contained in the MDLLT 4.3 release.

3.6 Installation Instructions

The MDLLT segment v4.3 series IP referenced in Section 2 of this document provides comprehensive installation instructions for the MDLLT segment. The fully installed segment occupies approximately 1.52 MB of disk space. The software requires a minimum of 128 MB of RAM, with 192 MB recommended.

3.7 Possible Problems and Known Errors

Known problems and errors with MDLLT software are listed in Appendix C of this document.

4 NOTES

4.1 Glossary of Acronyms

AESS	Allied Environmental Support System
API	Application Program Interface
COE	Common Operating Environment
DII	Defense Information Infrastructure
GCCS	Global Command and Control System
IC4ISR	Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance
IMOSS	Interim Mobile Oceanographic Support System
INFXCN	Informix Connect Segment
IP	Installation Procedures
JMCIS	Joint Maritime Command Information System
JMS	Joint METOC Segment
LLT	Latitude-Longitude-Time
MDLLT	LLT Observation Database Segment of the TESS(NC) METOC Database
METOC	Meteorology and Oceanography
MIDDS	Meteorological Integrated Data Display System
NC	Next Century
NITES	Navy Integrated Tactical Environmental Subsystem
PTR	Program Trouble Report
SQL	Structured Query Language
SVD	Software Version Description
T&E	Test and Evaluation
TAF	Terminal Aerodrome Forecast
TESS	Tactical Environmental Support System

Appendix A - List of Executables and Environment Files

A.1 File Structure for HP-UX Delivery

```
/h/MDLLT
total 12
drwxr-xr-x  2 sysadmin   COE      24      Jun 15 20:20 bin
drwxr-xr-x  2 sysadmin   COE      1024    Oct  8 21:04 data
drwxr-xr-x  2 sysadmin   COE      1024    Oct  8 21:04 Scripts
drwxr-xr-x  3 sysadmin   COE      1024    Oct  8 21:04 install
drwxrwxr-x  2 313        COE      1024    Oct  8 21:04 Integ
drwxr-xr-x  2 sysadmin   COE      1024    Oct  8 23:14 SegDescrip

/h/MDLLT/bin
total 0

/h/MDLLT/data
total 2814
-r--r--r--  1 sysadmin   COE      34      Oct  7 00:28 mdllt_aoi.txt
-r--r--r--  1 sysadmin   COE      3466    Oct  7 00:28 mdllt_aoirect.txt
-r--r--r--  1 sysadmin   COE      28745   Oct  7 00:28 mdllt_cannedSQL.txt
-r--r--r--  1 sysadmin   COE      3644    Oct  7 00:28 mdllt_dataTypeToSQL.txt
-r--r--r--  1 313        COE      5405    Oct  7 00:28 mdllt_dbbuoy.txt
-r--r--r--  1 sysadmin   COE      380     Oct  7 00:28 mdllt_colareas.txt
-r--r--r--  1 313        COE      504500  Oct  7 00:28 mdllt_icao.txt
-r--r--r--  1 sysadmin   COE      86      Oct  7 00:28 mdllt_obtypes.txt
-r--r--r--  1 sysadmin   COE      274     Oct  7 00:28 mdllt_obsubtypes.txt
-r--r--r--  1 sysadmin   COE      864952  Oct  7 00:28 mdllt_stationid.txt

/h/MDLLT/Scripts
total 0

/h/MDLLT/install
total 14
-rwxr-xr-x  1 sysadmin   COE      4753    Oct  7 00:28 install_mdllt
-rwxr-xr-x  1 sysadmin   COE      569     Oct  7 00:28 deinstall_mdllt
drwxr-xr-x  2 sysadmin   COE      1024    Oct  8 21:04 sql

/h/MDLLT/Integ
total 2
-rwxrwxr-x  1 313        COE      729     Oct  7 00:28 VSOutput

/h/MDLLT/SegDescrip
total 26
-r--r--r--  1 sysadmin   COE      1600    Oct  7 00:28 FileAttribs
-r--r--r--  1 sysadmin   COE      26      Oct  7 00:28 VERSION
-r--r--r--  1 sysadmin   COE      429     Oct  7 00:28 ReleaseNotes
-r--r--r--  1 sysadmin   COE      372     Oct  7 00:28 SegName
-r-xr-xr-x  1 sysadmin   COE      2127    Oct  7 00:28 PostInstall
-r-xr-xr-x  1 sysadmin   COE      655     Oct  7 00:28 DEINSTALL
-r-xr-xr-x  1 sysadmin   COE      199     Oct  7 00:28 PreInstall
-r--r--r--  1 sysadmin   COE      251     Oct  8 19:50 SegInfo
-rw-rw-rw-  1 root        COE      128     Oct  8 19:51 Validated
-rw-rw-rw-  1 root        other    140     Oct  8 21:06 Installed
```

```
/h/MDLLT/install/sql
total 100
-rwxr-xr-x  1 sysadmin    COE      86      Jul  8 18:52 mdllt_wmoid.cmd
-rwxr-xr-x  1 sysadmin    COE      2478    Oct  7 00:28 MDLLT_AOI_Scripts
-rwxr-xr-x  1 sysadmin    COE      1846    Oct  7 00:28 MDLLT_ObTypes_Scripts
-rwxr-xr-x  1 sysadmin    COE      5260    Oct  7 00:28 MDLLT_crttable_Scripts
-rwxr-xr-x  1 sysadmin    COE      7613    Oct  7 00:28 MDLLT_dsDir_Scripts
-rwxr-xr-x  1 sysadmin    COE      11221   Oct  7 00:28 MDLLT_stationID_Scripts
-rwxr-xr-x  1 sysadmin    COE      81      Oct  7 00:28 mdllt_aoi.cmd
-rwxr-xr-x  1 sysadmin    COE      1973    Oct  7 00:28 MDLLT_ObSubTypes_Scripts
-rwxr-xr-x  1 sysadmin    COE      90      Oct  7 00:28 mdllt_cannedSQL.cmd
-rwxr-xr-x  1 sysadmin    COE      2820    Oct  7 00:28 MDLLT_ColAreas_Scripts
-rwxr-xr-x  1 sysadmin    COE      92      Oct  7 00:28 mdllt_colareas.cmd
-rwxr-xr-x  1 sysadmin    COE      97      Oct  7 00:28 mdllt_dataTypeToSQL.cmd
-rwxr-xr-x  1 sysadmin    COE      10      Oct  7 00:28 mdllt_drop_file_inf
-rwxr-xr-x  1 sysadmin    COE      92      Oct  7 00:28 mdllt_dsDir.cmd
-rwxr-xr-x  1 sysadmin    COE      1606    Oct  7 00:28 mdllt_cds_scripts
-rwxr-xr-x  1 sysadmin    COE      92      Oct  7 00:28 mdllt_obsubtypes.cmd
-rwxr-xr-x  1 sysadmin    COE      86      Oct  7 00:28 mdllt_obtypes.cmd
-rwxr-xr-x  1 sysadmin    COE      93      Oct  7 00:28 mdllt_stationid.cmd
-r--r--r--  1 313         COE      89      Oct  7 00:28 mdllt_icao.cmd
-r--r--r--  1 313         COE      86      Oct  7 00:28 mdllt_buoy.cmd
-rwxr-xr-x  1 sysadmin    COE      18      Oct  8 21:05 mdllt_create_file_inf
```

Appendix B - Changes/Updates Since Preliminary Release

This release made the following changes:

Pri	PTR #	Summary
2	132	Block Station IDs in LLT database are invalid.
2	170	ASW Domain is not supported in current implementation of TEDS.
3	73	Ship speed and direction need to be added to bathy, buoy, and synoptic reports.
3	124	The data file “station.data” contains an error. The longitude is –816, which is an invalid entry. It has been changed to –81.6 in the flat file. This change should be made in the database.
3	194	Upper air reports parts b and d do not have heights, need to change primary key from height to pressure.
3	195	Need to add station elevation to fixed station reports.
3	197	Buoy needs outer join.
3	206	Obs with negative time values are getting into the database
4	156	Duplicate entries in the Station ID table.

Appendix C - Known Problems and Errors

Pri	PTR #	Summary
4	51	The current DBAdminR tool set does not allow for full DII COE Level 5 compliance because the database development is limited to the informix.

A detailed Program Trouble Report (PTR) is contained on the following pages.